



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,852	03/04/2004	Masayuki Kita	2018-856	5317
23117	7590	10/03/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EDWARDS, LOREN C	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

88

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/791,852	KITA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Loren C. Edwards	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6, 8-10, 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 1, 7, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/4/2004</u> .  | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The applicants' information disclosure statement (IDS) submitted on 3/4/2004 is acknowledged. The examiner has considered the references listed therein.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 17. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

1. Claim 9 is objected to because of the following informalities: "change" is not correct in grammar. Examiner suggests adding an "s" so that it reads "changes". Appropriate correction is required.
2. Claim 4 is objected to because of the following informalities: "and for gradually changing the target air-fuel ratio the initial value to a stoichiometric air-fuel ratio". This sentence is not grammatically correct and appropriate correction is required.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Zhang. Zhang discloses a secondary air supply control apparatus of an internal combustion engine that has: a catalyst located in the exhaust track for cleaning the exhaust gas (Fig. 1, no. 19), a secondary air supply mechanism for supplying secondary air in to the exhaust track located upstream of the catalyst (Fig. 1, no. 26 and 28-29), an air-fuel ratio detection unit located between the secondary air and the catalyst (Fig. 1, no. 18),

Art Unit: 3748

and an air-fuel ratio feedback control unit which, when secondary air is present and a feedback control condition is established, will cause the air-fuel ratio in the exhaust track to become coincident with a previously determined value (Fig. 2, steps 2-4, 7-8, and 10).

3. Claim 7 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Takeshima (U.S. Pat. No. 5,448,887). Takeshima discloses a secondary air supply control apparatus of an internal combustion engine, comprising: a catalyst disposed in an exhaust passage of an internal combustion engine for purifying the exhaust gas (Fig. 15, no. 12), a secondary air supply mechanism for supplying secondary air into the exhaust passage at an upstream side of the catalyst (Fig. 15, no. 66-67), and a fuel supply control unit for inhibiting an increase in an amount of fuel injection to the internal combustion engine during supply of the secondary air provided by the secondary air supply mechanism (Col. 18, line 61- Col. 19 , line 2).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3748

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Abe (U.S. Pat. No. 5,247,910). Zhang discloses the device of claim 11 but does not disclose an air-fuel ratio arithmetic unit for calculating the air-fuel ratio from a minimum value of output values detected by the air-fuel ratio detection unit. Abe teaches an air-fuel ratio calculation means that uses the minimum value from the systems air-fuel detection unit (Col. 1, lines 56-59). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the air-fuel calculation unit of Abe in the secondary air supply control apparatus for the advantage of standardized control of the air-fuel ratio.

7. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang as applied to claim 11 above, and further in view of Mitsutani (U.S. Pat. No. 5,887,421). The modified Zhang discloses the device of claim 11 above but fails to specifically disclose that the system calculates the air-fuel ratio during supply of secondary air at a specified crank angle. Mitsutani teaches a device which calculates the air-fuel ratio at every specified crank angle (Fig. 11; Col. 9, lines 28-93; Col 9, lines 59-60). It would have been obvious to one having ordinary skill in the art at the time of the invention to

Art Unit: 3748

utilize the method of Nanba in the Zhang device for the advantage of syncing the air-fuel ratio with the engine speed assuring that the air-fuel ratio was correct at all times.

***Allowable Subject Matter***

8. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 4-6, 8-10, and 13-14 are allowed.

***Conclusion***

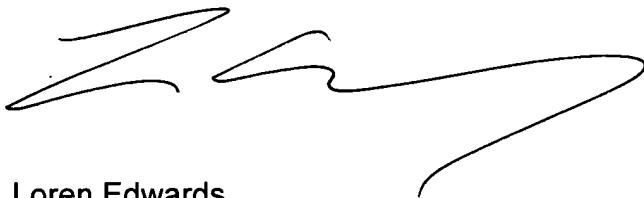
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hirooka (U.S. Pub. No. 2004/060282) reads on claims 7 and 8.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Loren C. Edwards whose telephone number is (703) 272-2765. The examiner can normally be reached on M-F 7-4.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3748

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Loren Edwards  
(571) 272-2756



THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700